PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2005-343960

(43)Date of publication of application : 15.12.2005

(51)Int.Cl. C09B 67/08
C09B 67/20
C09B 67/46

(21)Application number : 2004-163373

(22)Date of filing : 01.06.2004

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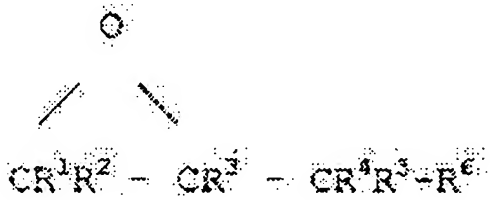
(54) COMPOSITION FOR SURFACE TREATMENT OF PIGMENT AND METHOD FOR THE TREATMENT

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a surface-treated pigment composition, surface-treated pigment dispersion and a method for surface-treating pigment particles.

SOLUTION: This pigment composition contains pigment particles and an epoxy compound for surface-treating the pigment particles, and the pigment particles are treated with the epoxy compound expressed by the formula [wherein, R1 to R5 are each H or an alkyl; R6 is H, OOCR7, OR8, OOCCR9=CR10R11, diphenyl, phenyl, a monoepoxy or polyepoxy group containing an alkyl or a cycloalkyl, or a monoepoxy or polyepoxy group containing a polyether group; R7, R8, R10 and R11 are each H, an alkyl, a cycloalkyl, an aryl or an alkenyl: R9 is H or an alkyl; and provided that the epoxy compound does not have a silicon-containing group].



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[Date of request for examination] 25.05.2007

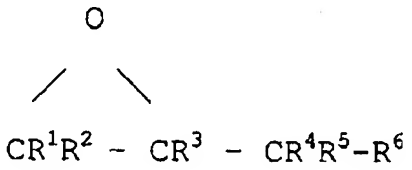
[Date of sending the examiner's decision of rejection]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1]
It is a pigment constituent containing the epoxy compound for carrying out surface treatment of a pigment particle and this pigment particle, and this epoxy compound is a general formula. :
[Formula 1]



the inside of [type, and R1, R2, R3, R4 and R5 -- respectively -- independently -- hydrogen, a permutation, or unsubstituted alkyl -- it is -- R2 and R4 -- together -- becoming -- 5 - 7 membered-ring -- forming -- obtaining -- and [or]
R6 is the mono-epoxy or the Pori epoxy group containing mono-epoxy or Pori epoxy group; or the polyether radical containing hydrogen, -OOCR7, -OR8, -OOC-CR9=CR10R11; diphenyl, phenyl, a permutation, unsubstituted alkyl, or cycloalkyl,
R7, R8, R10, and R11 are hydrogen, a permutation or unsubstituted alkyl, a permutation or unsubstituted cycloalkyl, a permutation, unsubstituted aryl, a permutation, or the unsubstituted alkenyl independently, respectively,
R9 is hydrogen or alkyl,
However, this epoxy compound is] which does not have a silicon content radical.
The pigment constituent which ****.
[Claim 2]
The pigment constituent according to claim 1 with which said epoxy compound has less than 1000 weight-per-epoxy-equivalent weight (epoxy equivalent weight).
[Claim 3]
The pigment constituent according to claim 1 chosen from the group which said epoxy compound becomes from glycidylethers, glycidyl ester, an alicyclic epoxy compound, and an alicyclic diepoxy compound.
[Claim 4]
The pigment constituent according to claim 1 chosen from the group which said epoxy compound becomes from glycidyl methacrylate and glycidyl acrylate.
[Claim 5]
It is the pigment dispersion containing the pigment particle distributed in the dispersant and this dispersant, and this pigment particle is a general formula. :
[Formula 2]

the inside of [type, and R1, R2, R3, R4 and R5 -- respectively -- independently -- hydrogen, a permutation, or unsubstituted alkyl -- it is -- R2 and R4 -- together -- becoming -- 5 - 7 membered-ring -- forming -- obtaining -- and [or]
R6 is the mono-epoxy or the Pori epoxy group containing mono-epoxy or Pori epoxy group; or the polyether radical containing hydrogen, -OOCR7, -OR8, -OOC-CR9=CR10R11; diphenyl, phenyl, a permutation, unsubstituted alkyl, or cycloalkyl,
R7, R8, R10, and R11 are hydrogen, a permutation or unsubstituted alkyl, a permutation, unsubstituted aryl, a permutation, or the unsubstituted alkenyl independently, respectively,
R9 is hydrogen or alkyl,
However, this epoxy compound is] which does not have a silicon content radical.
Pigment dispersion currently processed with the epoxy compound which ****.
[Claim 6]
Pigment dispersion according to claim 5 in which said epoxy compound has less than 1000 weight-per-epoxy-equivalent weight.
[Claim 7]
Pigment dispersion according to claim 5 chosen from the group which said epoxy compound becomes from glycidylethers, glycidyl ester, an alicyclic epoxy compound, and an alicyclic diepoxy compound.
[Claim 8]
Pigment dispersion according to claim 5 chosen from the group which said epoxy compound becomes from glycidyl methacrylate and glycidyl acrylate.
[Claim 9]
It is the approach of carrying out surface treatment of the pigment particle,
This pigment particle and an epoxy compound are mixed under existence of a solvent, and a slurry is formed.; it reaches.
This pigment particle is made to react with this epoxy compound at an elevated temperature (elevated temperature),
It includes,
Here, this epoxy compound is a general formula. :
[Formula 3]

the inside of [type, and R1, R2, R3, R4 and R5 -- respectively -- independently -- hydrogen, a permutation, or unsubstituted alkyl -- it is -- R2 and R4 -- together -- becoming -- 5 - 7 membered-ring -- forming -- obtaining -- and [or]
R6 is the mono-epoxy or the Pori epoxy group containing mono-epoxy or Pori epoxy group; or the polyether radical containing hydrogen, -OOCR7, -OR8, -OOC-CR9=CR10R11; diphenyl, phenyl, a permutation, unsubstituted alkyl, or cycloalkyl,
R7, R8, R10, and R11 are hydrogen, a permutation or unsubstituted alkyl, a permutation, unsubstituted aryl, a permutation, or the unsubstituted alkenyl independently, respectively,

R9 is hydrogen or alkyl,
However, this epoxy compound is] which does not have a silicon content radical.
How to ****.
[Claim 10]
The approach according to claim 9 said epoxy compound has less than 1000 weight-per-epoxy-equivalent weight.
[Claim 11]
The approach according to claim 9 chosen from the group which said epoxy compound becomes from glycidylethers, glycidyl ester, an alicyclic epoxy compound, and an alicyclic diepoxy compound.
[Claim 12]
The approach according to claim 9 chosen from the group which said epoxy compound becomes from glycidyl methacrylate and glycidyl acrylate.
[Claim 13]
The approach according to claim 9 of removing said solvent and including further the process which dries said pigment particle processed with said epoxy compound.

[Translation done.]